

Remarks

In view of the above amendments and the following remarks, reconsideration of the rejections and further examination are requested.

The specification and abstract have been reviewed and revised to make a number of editorial revisions thereto. A substitute specification and abstract including the revisions have been prepared and are submitted herewith. No new matter has been added. Also submitted herewith are marked-up copies of the specification and abstract indicating the changes incorporated therein.

Claim 4 has been rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. Claim 4 has been amended so as to address this rejection. As a result, withdrawal of the rejection under 35 U.S.C. §101 is respectfully requested.

Claims 1-3 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Schmidt (US 2,938,117). Claims 2-4 have been rejected under 35 U.S.C. §102(b) as being anticipated by Schmidt.

Claims 1, 2 and 4 have been amended so as to further distinguish the present invention, as recited therein, from the reference relied upon in the rejections. Further, claim 3 has been amended and new claims 5-8 have been added.

It is submitted that the above-mentioned rejections are inapplicable to the amended claims for the following reasons.

Claim 1 is patentable over Schmidt, since claim 1 recites a method including, in part:

establishing, at a substantially identical depth, a plurality of gaseous hydrocarbon content ratios, in pairs, for at least one first depth range, the establishing comprising plotting on a plot a content of a first of a plurality of gaseous hydrocarbons in an effluent at a given depth versus a content of a second of the plurality of gaseous hydrocarbons at the given depth for successive depths in the at least one first depth range, each data point of the plot corresponding to one of the gaseous hydrocarbon content ratios;

selecting, within the plot, from the plurality of gaseous hydrocarbon content ratios, a subgroup of reference ratios constituting a signature that is representative of a gaseous hydrocarbon composition of the effluent in the at least one first depth range, the signature being formed by at least one straight line which is taken from a group of straight lines, each of the straight lines

having a given inclination value representing the content of the first gaseous hydrocarbon as a function of the content of the second gaseous hydrocarbon; and

comparing the signature with at least one reference signature in order to determine the hydrocarbon composition of the geological strata corresponding to the at least one first depth range. Schmidt fails to disclose or suggest the above features recited in claim 1.

Schmidt discloses a gas detection and analysis apparatus that analyzes the hydrocarbon content of successive samples of a drilling mud. The system is capable of determining the hydrocarbon content as a function of depth. Further, the system allows for the plotting of curves relating to the ratio of the production of gas to liquid hydrocarbons in a given area of a well, as a function of the ratios of couples of hydrocarbons taken two by two, as measured by the system. (See column 2, lines 12-29; column 4, lines 42-46; column 7, line 21 – column 8, line 57; and Figures 1-3 and 6).

However, it is apparent from the above discussion that Schmidt fails to disclose or suggest plotting on a plot a content of a first of a plurality of gaseous hydrocarbons in an effluent at a given depth versus a content of a second of the plurality of gaseous hydrocarbons at the given depth for successive depths in at least one first depth range, each data point of the plot corresponding to one of the gaseous hydrocarbon content ratios. There is nothing disclosed or suggested in Schmidt that corresponds to a particular area in the form of a straight line in a plot as recited in claim 1.

Further, Schmidt fails to disclose or suggest comparing a signature (obtained from a plot) with at least one reference signature in order to determine the hydrocarbon composition of the geological stratum corresponding to the at least one first depth range. As a result, claim 1 is patentable over Schmidt.

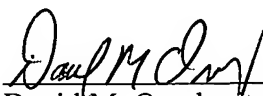
As for claims 2 and 4, they are patentable over Schmidt for reasons similar to those set forth above in support of claim 1.

Because of the above-mentioned distinctions, it is believed clear that claims 1-8 are allowable over Schmidt. Furthermore, it is submitted that the distinctions are such that a person having ordinary skill in the art at the time of invention would not have been motivated to make any combination of the references of record in such a manner as to result in, or otherwise render obvious, the present invention as recited in claims 1-8. Therefore, it is submitted that claims 1-8 are clearly allowable over the prior art of record.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance. The Examiner is invited to contact the undersigned by telephone if it is felt that there are issues remaining which must be resolved before allowance of the application.

Respectfully submitted,

Nicolas FRECHIN et al.

By: 
David M. Ovedovitz
Registration No. 45,336
Attorney for Applicants

DMO/jmj
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
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